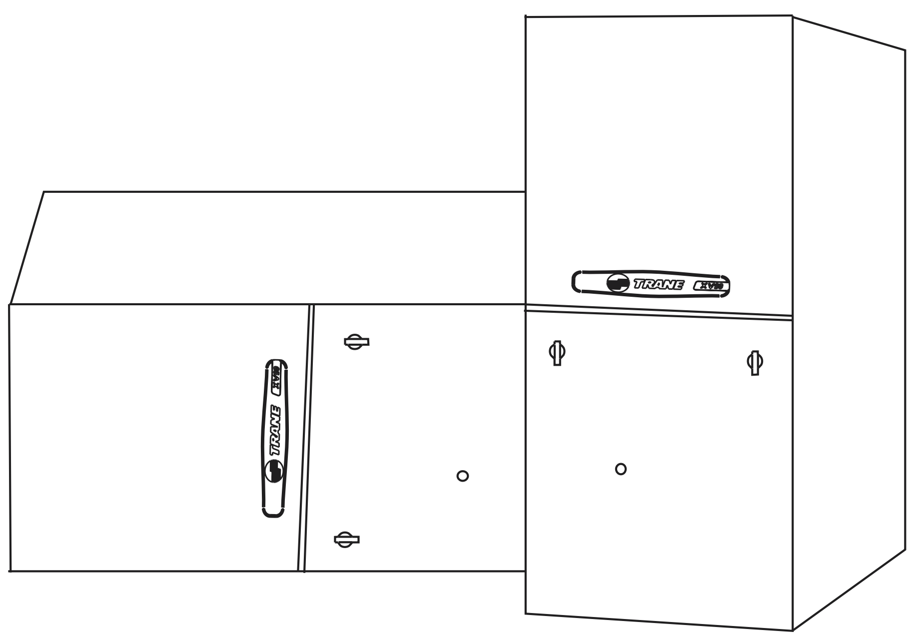
Upflow/Horizontal Two-stage Condensing Gas-Fired Furnace

XV 90

TUY060,080,100,120R9V
Variable Speed Blower
Variable Speed Inducer



PUB. NO. 22-1682-05-0802 (EN)

General Features

NATURAL GAS MODELS
Central heating furnace designs are certified by the International Approval Services (IAS) for both natural and L.P. gas. Limit setting and rating data were established and approved under standard rating conditions using American National Standards Institute standards.

SAFE OPERATION
The Integrated System Control has solid state devices, which continuously monitor for presence of flame, when the system is in the heating mode of operation. Dual solenoid combination gas valve and regulator provide extra safety.

QUICK HEATING
Durable, cycle tested, heavy gauge **aluminized steel heat exchanger** quickly transfers heat to provide warm conditioned air to the structure. **Low energy power vent blower,** to increase efficiency and provide a positive discharge of gas fumes to the outside.

BURNERS
Multi-port In-shot burners will give years of quiet and efficient service. All models can be converted to **L.P. gas** without changing burners.

INTEGRATED SYSTEM CONTROL
Exclusively designed operational program provides total control of furnace limit sensors, blowers, gas valve, flame control and includes self diagnostics for ease of service. Also contains connection points for E.A.C./humidifier.

CONDENSATE DRAIN
Built-in trap which can drain from either side when the furnace is installed upflow.

AIR DELIVERY
The variable speed, direct drive blower motor, has sufficient airflow for most heating and cooling requirements, will switch from heating to cooling speeds on demand from room thermostat. The blower door safety switch will prevent or terminate furnace operation when the blower door is removed.

SECONDARY HEAT EXCHANGER
The XV 90 has a special type 29-4C™ stainless steel secondary heat exchanger to reclaim heat from flue gases which would normally be lost outside.

STYLING
Heavy gauge steel and "wrap-around" cabinet construction is used in the cabinet with baked-on enamel finish for strength and beauty. The heat exchanger section of the cabinet is completely lined with foil faced fiberglass insulation. This results in quiet and efficient operation due to the excellent acoustical and insulating qualities of fiberglass. Built-in bottom pan and alternate bottom, left or right side return air connection in vertical position.

FEATURES AND GENERAL OPERATION
The XV 90 High Efficiency Gas Furnaces employ a Hot Surface Ignition system, which eliminates the waste of a constant burning pilot. The integrated system control lights the main burners upon a demand for heat from the room thermostat. Complete front service access.

a. Low energy power venter.
b. Vent proving differential switch.

Pub. No. 22-1682-05-0802 (EN)

Contents

Features and Benefits

XV 90 STANDARD EQUIPMENT

- Variable speed indoor blower
- Silicon Nitride Igniter with adaptive heat up
- Variable speed induced draft blower
- Direct/Non-Direct vent option
- Fused 24 volt control circuit
- Manual reset burner safety switches
- Power supply 115/1/60
- Convertible to horizontal on left side
- 2-stage gas valve
- PVC venting-1 or 2 pipe option
- Accessory hook-up capability
- Integrated solid state control with self-diagnostics
- Attractive color accents
- Heavy gauge aluminized steel heat exchanger
- Multi-port In-shot burners
- HInged blower door
- Perfect fit door latches
- Insulated blower door
- Gasketed blower door
- Internal filter rack
- Standard filter sizes
- Two tone color
- Complete front service access
- Left/right gas connection
- Adjustable fan off times
- Cleanable high velocity filters
- Optional L.P conversion kit
- Selectable cooling fan off delay eliminates need for BAY24X045 time delay kit
- **Lifetime limited primary heat exchanger or secondary heat exchanger warranty to original owner (Residential use)**
- **5 Year limited parts warranty**

Features and Benefits

OPTIONAL EQUIPMENT

Thermostat, Mechanical 2-Stage Heating/1-Stage Cooling	TAYSTAT241 [ ]
Thermostat, Heating/Cooling Single Stage (Mounts Horizontally)	AY28X092 [ ]
Thermostat, Heating/Cooling Single Stage (Mounts Vertically)	BAYSTAT305 [ ]
Thermostat, Electronic Programmable 2-Stage Heating/2-Stage Cooling	TAYSTAT302C [ ]
Thermostat, Electronic Programmable 1-Stage Heating/1-Stage Cooling	TAYSTAT300C [ ]
Propane Conversion Kit	BAYLPKT210A [ ]
Electronic Air Filter, "Perfect Fit" Super Efficiency (14-1/2" Wide Gas Furnace)	TFE145A9FR0 [ ]
Electronic Air Filter, "Perfect Fit" Super Efficiency (17-1/2" Wide Gas Furnace)	TFE175A9FR0 [ ]
Electronic Air Filter, "Perfect Fit" Super Efficiency (21" Wide Gas Furnace)	TFE210A9FR0 [ ]
Electronic Air Filter, "Perfect Fit" Super Efficiency (24-1/2" Wide Gas Furnace)	TFE245A9FR0 [ ]
Electronic Air Filter, "Perfect Fit" High Efficiency (14-1/2" Wide Gas Furnace)	TFM145A9FR0 [ ]
Electronic Air Filter, "Perfect Fit" High Efficiency (17-1/2" Wide Gas Furnace)	TFM175A9FR0 [ ]
Electronic Air Filter, "Perfect Fit" High Efficiency (21" Wide Gas Furnace)	TFM210A9FR0 [ ]
Electronic Air Filter, "Perfect Fit" High Efficiency (24-1/2" Wide Gas Furnace)	TFM245A9FR0 [ ]
Electronic Air Filter, "Perfect Fit" Standard Efficiency (14-1/2" Wide Gas Furnace)	TFP145A9FR0 [ ]
Electronic Air Filter, "Perfect Fit" Standard Efficiency (17-1/2" Wide Gas Furnace)	TFP175A9FR0 [ ]
Electronic Air Filter, "Perfect Fit" Standard Efficiency (21" Wide Gas Furnace)	TFP210A9FR0 [ ]
Electronic Air Filter, "Perfect Fit" Standard Efficiency (24-1/2" Wide Gas Furnace)	TFP245A9FR0 [ ]
Coil Enclosure (14-1/2" Wide Cabinets)	BAYCLE1400C [ ]
Coil Enclosure (17-1/2" Wide Cabinets)	BAYCLE1700C [ ]
Coil Enclosure (21" Wide Cabinets)	BAYCLE2100C [ ]
Coil Enclosure (24-1/2" Wide Cabinets)	BAYCLE2400C [ ]
Side Filter Rack	BAYFLTR200 [ ]
Filter Kit/Horizontal Conversion TUY060, 080-R	BAYFLTR203 [ ]
Filter Kit/Horizontal Conversion TUY100-R	BAYFLTR204 [ ]
Filter Kit/Horizontal Conversion TUY120-R	BAYFLTR205 [ ]
Filter Accessory Kit Upflow 14.5" Furnaces	BAYFLTR317 [ ]
Filter Accessory Kit Upflow 21" Furnaces	BAYFLTR321 [ ]
Filter Accessory Kit Upflow 24.5" Furnaces	BAYFLTR324 [ ]
High Altitude Switch TUY060R	BAYHALT245① [ ]
High Altitude Switch TUY080, 100R	BAYHALT246① [ ]
High Altitude Switch TUY120R	BAYHALT247① [ ]
Concentric Vent Kit	BAYVENT100A [ ]
Sidewall Vent Termination Kit	BAYVENT200B [ ]
Manufactured/Mobile Home Kit	BAYMFGH100A [ ]

① Optional kit allows 200 ft. max. vent length from 5,000-12,000 feet above sea level. See installer's guide.

General Data

TUY-R9V PRODUCT SPECIFICATIONS①

MODEL	TUY060R9V3V	TUY080R9V3V	TUY100R9V4V	TUY120R9V5V
RATINGS②				
1st Stage Input BTUH	39000	52000	65000	78000
1st Stage Capacity BTUH (ICS)③	37000	49000	62000	74000
2nd Stage Input BTUH	60000	80000	100000	120000
2nd Stage Capacity BTUH (ICS)③	56000	73000	93000	112000
AFUE (ICS)	93.0	92.5	93.0	92.5
Temp. Rise (Min.-Max.) °F.	35 - 65	35 - 65	35 - 65	40 - 70
BLOWER DRIVE	DIRECT	DIRECT	DIRECT	DIRECT
Dia.-Width (In.)	10 x 8	10 x 8	10 x 10	10 x 10
No. Used	1	1	1	1
Speeds (No.)	VARIABLE	VARIABLE	VARIABLE	VARIABLE
CFM vs. in. w.g.	SEE FAN PERF. TABLE	SEE FAN PERF. TABLE	SEE FAN PERF. TABLE	SEE FAN PERF. TABLE
Motor HP	1/2	1/2	1	1
R.P.M.	VARIABLE	VARIABLE	VARIABLE	VARIABLE
Volts/Ph/Hz	115/1/60	115/1/60	115/1/60	115/1/60
COMBUSTION FAN - TYPE	CENTRIFUGAL	CENTRIFUGAL	CENTRIFUGAL	CENTRIFUGAL
Drive - No. Speeds	DIRECT - VARIABLE	DIRECT - VARIABLE	DIRECT - VARIABLE	DIRECT - VARIABLE
Motor HP - RPM	1/15 - 5000	1/15 - 5000	1/15 - 5000	1/25 - 5000
Volts/Ph/Hz	115/1/60	115/1/60	115/1/60	115/1/60
FL Amps	1.1	1.1	1.1	1.1
FILTER — Furnished?	YES	YES	YES	YES
Type Recommended	HIGH VELOCITY	HIGH VELOCITY	HIGH VELOCITY	HIGH VELOCITY
Filter (No.-Size-Thk.)	1 X 17 X 25 X 1	1 X 17 X 25 X 1	1 - 20 X 25 X 1	1 - 24 X 25 X 1
VENT — Size (In.)	2 ROUND	2 ROUND	3 ROUND	3 ROUND
HEAT EXCHANGER				
Type -Fired	ALUMINIZED STEEL TYPE 1	ALUMINIZED STEEL TYPE 1	ALUMINIZED STEEL TYPE 1	ALUMINIZED STEEL TYPE 1
-Unfired				
Gauge (Fired)	20	20	20	20
ORIFICES — Main				
Nat. Gas. Qty. — Drill Size	3 - 45	4 - 45	5 - 45	6 - 45
L.P. Gas Qty. — Drill Size	3 - 56	4 - 56	5 - 56	6 - 56
GAS VALVE	REDUNDANT - TWO STAGE	REDUNDANT - TWO STAGE	REDUNDANT - TWO STAGE	REDUNDANT - TWO STAGE
DIRECT IGNITION DEVICE				
Type	HOT SURFACE IGNITER	HOT SURFACE IGNITER	HOT SURFACE IGNITER	HOT SURFACE IGNITER
BURNERS — Type	IN-SHOT	IN-SHOT	IN-SHOT	IN-SHOT
Number	3	4	5	6
POWER CONN. — V/Ph/Hz④	115/1/60	115/1/60	115/1/60	115/1/60
Ampacity (In Amps)	8.4	8.4	11.4	11.4
Max. Overcurrent Protection (Amps)	15	15	15	15
PIPE CONN. SIZE (IN.)	0.50	0.50	0.50	0.50
DUCT CONN.	SEE OUTLINE DRAWING	SEE OUTLINE DRAWING	SEE OUTLINE DRAWING	SEE OUTLINE DRAWING
DIMENSIONS	H X W X D	H X W X D	H X W X D	H X W X D
Crated (In.)	41-3/4 X 19-1/2 X 30-1/2	41-3/4 X 19-1/2 X 30-1/2	41-3/4 X 23 X 30-1/2	41-3/4 X 26-1/2 X 30-1/2
Uncrated	SEE OUTLINE DRAWING	SEE OUTLINE DRAWING	SEE OUTLINE DRAWING	SEE OUTLINE DRAWING
WEIGHT				
Shipping (Lbs.)/Net (Lbs.)	158/146	158/148	171/160	205/193

① Central Furnace heating designs are certified by AGA and CSA.
② For U.S. applications, above input ratings (BTUH) are up to 2,000 feet, derate 4% per 1,000 feet for elevations above 2,000 feet above sea level. For Canadian applicaitons, above input ratings (BTUH) are up to 4,500 feet, derate 4% per 1,000 feet for elevations above 4,500 feet above sea level.
③ Based on U.S. government standard tests.
④ The above wiring specifications are in accordance with National Electrical Code; however, installations must comply with local codes.

Pub. No. 22-1682-05-0802 (EN)

Performance Data

*UY060R9V3V FURNACE COOLING AIRFLOW (CFM) AND POWER (WATTS) VS. EXTERNAL STATIC PRESSURE WITH FILTER											
OUTDOOR UNIT SIZE (TONS)	AIRFLOW SETTING	DIP SWITCH SETTING					EXTERNAL STATIC PRESSURE				
		SW 1	SW 2	SW 3	SW 4		0.1	0.3	0.5	0.7	0.9
1.5	LOW (350 CFM/TON)	ON	ON	OFF	ON	CFM WATTS	575 65	575 90	575 125	550 155	-
	NORMAL (400 CFM/TON)	ON	ON	OFF	OFF	CFM WATTS	640 70	640 110	640 140	630 175	-
	HIGH (450 CFM/TON)	ON	ON	ON	OFF	CFM WATTS	700 85	700 125	700 160	700 200	-
2.0	LOW (350 CFM/TON)	OFF	ON	OFF	ON	CFM WATTS	700 100	700 130	700 170	700 210	-
	NORMAL (400 CFM/TON)	OFF	ON	OFF	OFF	CFM WATTS	800 115	800 155	800 200	800 250	-
	HIGH (450 CFM/TON)	OFF	ON	ON	OFF	CFM WATTS	900 140	900 195	900 240	900 290	-
2.5	LOW (350 CFM/TON)	ON	OFF	OFF	ON	CFM WATTS	875 130	875 180	875 230	875 270	-
	NORMAL (400 CFM/TON)	ON	OFF	OFF	OFF	CFM WATTS	1000 175	1000 235	1000 285	1000 335	900 310
	HIGH (450 CFM/TON)	ON	OFF	ON	OFF	CFM WATTS	1125 235	1125 295	1125 345	1100 370	925 318
3	LOW (350 CFM/TON)	OFF	OFF	OFF	ON	CFM WATTS	1050 195	1050 260	1050 305	1050 350	920 315
	NORMAL (400 CFM/TON)	OFF	OFF	OFF	OFF	CFM WATTS	1200 275	1200 330	1200 385	1100 385	940 330
	HIGH (450 CFM/TON)	OFF	OFF	ON	OFF	CFM WATTS	1325 360	1325 425	1300 460	1175 425	1000 365

NOTES: * First letter may be "A" or "T"
1. At continuous fan setting: Heating or Cooling airflows are approximately 50% of selected cooling value.
2. LOW airflow (350 cfm/ton) is COMFORT & HUMID CLIMATE setting;
NORMAL airflow (400 cfm/ton) is typical setting;
HIGH airflow (450 cfm/ton) is DRY CLIMATE setting.

*UY060R9V3V FURNACE HEATING AIRFLOW (CFM) AND POWER (WATTS) VS. EXTERNAL STATIC PRESSURE WITH FILTER									
1st Stage Capacity = 37,000 2nd Stage Capacity = 56,000									
	AIRFLOW SETTING	DIP SWITCH SETTING			EXTERNAL STATIC PRESSURE				
		SW 7	SW 8		0.1	0.3	0.5	0.7	0.9
HEATING 1ST STAGE	LOW	ON	ON	CFM TEMP. RISE WATTS	600 57 85	600 57 110	600 57 155	600 57 190	-
	MEDIUM LOW	OFF	ON	CFM TEMP. RISE WATTS	700 49 90	700 49 130	700 49 175	700 49 210	-
	NORMAL **	ON	OFF	CFM TEMP. RISE WATTS	775 44 105	775 44 155	775 44 195	775 44 240	-
	HIGH	OFF	OFF	CFM TEMP. RISE WATTS	870 39 135	870 39 185	870 39 235	870 39 290	-
HEATING 2ND STAGE	LOW	ON	ON	CFM TEMP. RISE WATTS	860 61 140	920 57 200	920 57 245	920 57 300	670 79 245
	MEDIUM LOW	OFF	ON	CFM TEMP. RISE WATTS	1000 53 190	1000 53 255	1000 53 305	1000 53 340	700 75 255
	NORMAL **	ON	OFF	CFM TEMP. RISE WATTS	1125 47 250	1125 47 315	1125 47 370	1025 51 355	775 68 285
	HIGH	OFF	OFF	CFM TEMP. RISE WATTS	1250 42 340	1250 42 405	1250 42 445	1100 48 390	1000 53 355

NOTES:
* First letter may be "A" or "T"
** Factory setting

TRANE®

Performance Data

TUY080R9V3V FURNACE COOLING AIRFLOW (CFM) AND POWER (WATTS) VS. EXTERNAL STATIC PRESSURE WITH FILTER											
OUTDOOR UNIT SIZE (TONS)	AIRFLOW SETTING (See Notes)	DIP SWITCH SETTING					EXTERNAL STATIC PRESSURE				
		SW 1	SW 2	SW 3	SW 4		0.1	0.3	0.5	0.7	0.9
2.0	LOW (350 CFM/TON)	ON	ON	OFF	ON	CFM WATTS	750 84	750 122	750 154	720 185	710 221
	NORMAL (400 CFM/TON)	ON	ON	OFF	OFF	CFM WATTS	840 109	840 146	840 181	840 226	820 264
	HIGH (450 CFM/TON)	ON	ON	ON	OFF	CFM WATTS	940 136	940 177	940 215	940 274	940 318
2.5	LOW (350 CFM/TON)	OFF	ON	OFF	ON	CFM WATTS	850 113	850 150	870 200	890 250	890 295
	NORMAL (400 CFM/TON)	OFF	ON	OFF	OFF	CFM WATTS	960 150	990 200	1000 230	1020 305	1010 350
	HIGH (450 CFM/TON)	OFF	ON	ON	OFF	CFM WATTS	1080 195	1110 255	1120 315	1120 365	1080 390
3.0	LOW (350 CFM/TON)	ON	OFF	OFF	ON	CFM WATTS	1020 175	1020 225	1040 280	1050 330	1050 375
	NORMAL (400 CFM/TON)	ON	OFF	OFF	OFF	CFM WATTS	1170 240	1180 300	1200 365	1200 415	1130 420
	HIGH (450 CFM/TON)	ON	OFF	ON	OFF	CFM WATTS	1290 310	1320 410	1350 470	1340 520	1150 440
3.5	LOW (350 CFM/TON)	OFF	OFF	OFF	ON	CFM WATTS	1170 250	1190 315	1210 370	1210 435	1100 405
	NORMAL (400 CFM/TON)	OFF	OFF	OFF	OFF	CFM WATTS	1360 365	1390 445	1400 500	1360 535	1210 475
	HIGH (450 CFM/TON)	OFF	OFF	ON	OFF	CFM WATTS	1360 355	1390 450	1400 520	1350 535	1180 460

NOTES: Continuous Fan is with Thermostat Fan Switch on and Dip Switches 5 and 6 in the "ON" position.
1. At continuous fan setting: Heating or Cooling airflows are approximately 50% of selected cooling value.
2. LOW airflow (350 cfm/ton) is COMFORT & HUMID CLIMATE setting;
NORMAL airflow (400 cfm/ton) is typical setting;
HIGH airflow (450 cfm/ton) is DRY CLIMATE setting.

TUY080R9V3V FURNACE HEATING AIRFLOW (CFM) AND POWER (WATTS) VS. EXTERNAL STATIC PRESSURE WITH FILTER									
					1st Stage Capacity = 49,000 2nd Stage Capacity = 73,000				
	AIRFLOW SETTING	DIP SWITCH SETTING			EXTERNAL STATIC PRESSURE				
		SW 7	SW 8		0.1	0.3	0.5	0.7	0.9
HEATING 1ST STAGE	LOW	ON	ON	CFM TEMP. RISE WATTS	800 56 105	800 56 140	800 56 180	800 56 220	800 56 265
	MEDIUM LOW	OFF	ON	CFM TEMP. RISE WATTS	860 52 115	880 51 165	890 50 215	920 48 265	910 49 320
	NORMAL **	ON	OFF	CFM TEMP. RISE WATTS	960 46 150	990 45 200	1000 44 230	1020 44 310	1010 44 350
	HIGH	OFF	OFF	CFM TEMP. RISE WATTS	1080 41 195	1110 40 255	1120 40 315	1120 40 365	1080 41 390
HEATING 2ND STAGE	LOW	ON	ON	CFM TEMP. RISE WATTS	1100 62 205	1100 62 260	1120 61 320	1120 61 370	1090 63 400
	MEDIUM LOW	OFF	ON	CFM TEMP. RISE WATTS	1210 57 265	1240 55 340	1260 54 410	1260 54 470	1130 61 430
	NORMAL **	ON	OFF	CFM TEMP. RISE WATTS	1360 50 365	1390 49 445	1400 49 500	1360 50 535	1210 57 475
	HIGH	OFF	OFF	CFM TEMP. RISE WATTS	1360 50 355	1390 49 450	1400 49 520	1350 51 535	1180 58 465

NOTES:
** Factory setting

Pub. No. 22-1682-05-0802 (EN)

Performance Data

TUY100R9V4V FURNACE COOLING AIRFLOW (CFM) AND POWER (WATTS) VS. EXTERNAL STATIC PRESSURE WITH FILTER

OUTDOOR UNIT SIZE (TONS)	AIRFLOW SETTING (See Notes)	DIP SWITCH SETTING					EXTERNAL STATIC PRESSURE				
		SW 1	SW 2	SW 3	SW 4		0.1	0.3	0.5	0.7	0.9
3.0	LOW (350 CFM/TON)	ON	ON	OFF	ON	CFM WATTS	1040 165	1040 220	1040 270	1030 320	1030 375
	NORMAL (400 CFM/TON)	ON	ON	OFF	OFF	CFM WATTS	1210 235	1210 285	1230 360	1230 415	1230 475
	HIGH (450 CFM/TON)	ON	ON	ON	OFF	CFM WATTS	1340 390	1370 390	1400 465	1390 525	1370 580
3.5	LOW (350 CFM/TON)	OFF	ON	OFF	ON	CFM WATTS	1200 225	1220 280	1230 365	1250 425	1230 485
	NORMAL (400 CFM/TON)	OFF	ON	OFF	OFF	CFM WATTS	1390 335	1430 425	1430 495	1430 560	1400 590
	HIGH (450 CFM/TON)	OFF	ON	ON	OFF	CFM WATTS	1590 490	1590 575	1590 625	1580 685	1420 615
4.0	LOW (350 CFM/TON)	ON	OFF	OFF	ON	CFM WATTS	1370 325	1420 415	1430 490	1340 550	1410 595
	NORMAL (400 CFM/TON)	ON	OFF	OFF	OFF	CFM WATTS	1640 515	1640 585	1640 655	1590 680	1420 615
	HIGH (450 CFM/TON)	ON	OFF	ON	OFF	CFM WATTS	1840 700	1840 780	1770 795	1630 725	1470 655

NOTES: Continuous Fan is with Thermostat Fan Switch on and Dip Switches 5 and 6 in the "ON" position.
1. At continuous fan setting: Heating or Cooling airflows are approximately 50% of selected cooling value.
2. LOW airflow (350 cfm/ton) is COMFORT & HUMID CLIMATE setting;
NORMAL airflow (400 cfm/ton) is typical setting;
HIGH airflow (450 cfm/ton) is DRY CLIMATE setting.

TUY100R9V4V FURNACE HEATING AIRFLOW (CFM) AND POWER (WATTS) VS. EXTERNAL STATIC PRESSURE WITH FILTER

1st Stage Capacity = 62,000
2nd Stage Capacity = 93,000

	AIRFLOW SETTING	DIP SWITCH SETTING			EXTERNAL STATIC PRESSURE				
		SW 7	SW 8		0.1	0.3	0.5	0.7	0.9
HEATING 1ST STAGE	LOW	ON	ON	CFM TEMP. RISE WATTS	920 60 130	920 60 180	920 60 220	920 60 280	920 60 320
	MEDIUM LOW	OFF	ON	CFM TEMP. RISE WATTS	1020 54 165	1020 54 220	1020 54 260	1010 55 310	1000 56 365
	NORMAL **	ON	OFF	CFM TEMP. RISE WATTS	1160 48 220	1160 48 260	1160 48 325	1160 48 390	1150 48 430
	HIGH	OFF	OFF	CFM TEMP. RISE WATTS	1350 41 320	1380 40 400	1400 40 470	1400 40 540	1390 40 585
HEATING 2ND STAGE	LOW	ON	ON	CFM TEMP. RISE WATTS	1290 67 275	1290 67 355	1330 65 430	1340 64 490	1320 65 545
	MEDIUM LOW	OFF	ON	CFM TEMP. RISE WATTS	1410 61 3561	1460 59 455	1460 59 520	1460 59 590	1370 63 590
	NORMAL **	ON	OFF	CFM TEMP. RISE WATTS	1640 53 530	1640 53 590	1640 53 660	1600 54 695	1410 61 620
	HIGH	OFF	OFF	CFM TEMP. RISE WATTS	1970 44 855	1920 45 895	1780 48 820	1660 52 760	1520 57 695

NOTES:
** Factory setting

Performance Data

TUY120R9V5V FURNACE COOLING AIRFLOW (CFM) AND POWER (WATTS) VS. EXTERNAL STATIC PRESSURE WITH FILTER											
OUTDOOR UNIT SIZE (TONS)	AIRFLOW SETTING (See Notes)	DIP SWITCH SETTING					EXTERNAL STATIC PRESSURE				
		SW 1	SW 2	SW 3	SW 4		0.1	0.3	0.5	0.7	0.9
3.5	LOW (350 CFM/TON)	OFF	ON	OFF	ON	CFM WATTS	1210 220	1210 270	1220 325	1230 400	1230 445
	NORMAL (400 CFM/TON)	OFF	ON	OFF	OFF	CFM WATTS	1400 305	1440 390	1450 465	1450 510	1410 560
	HIGH (450 CFM/TON)	OFF	ON	ON	OFF	CFM WATTS	1590 425	1600 520	1610 600	1600 645	1380 575
4.0	LOW (350 CFM/TON)	ON	OFF	OFF	ON	CFM WATTS	1390 305	1400 375	1430 445	1440 515	1420 565
	NORMAL (400 CFM/TON)	ON	OFF	OFF	OFF	CFM WATTS	1620 420	1650 530	1670 595	1640 660	1480 600
	HIGH (450 CFM/TON)	ON	OFF	ON	OFF	CFM WATTS	1840 600	1830 690	1820 765	1670 700	1490 620
5	LOW (350 CFM/TON)	OFF	OFF	OFF	ON	CFM WATTS	1800 570	1780 630	1780 705	1700 695	1530 615
	NORMAL (400 CFM/TON)	OFF	OFF	OFF	OFF	CFM WATTS	2050 845	2010 875	1860 805	1710 735	1530 655
	HIGH (450 CFM/TON)	OFF	OFF	ON	OFF	CFM WATTS	2160 995	2040 935	1920 875	1780 805	1620 730

NOTES: Continuous Fan is with Thermostat Fan Switch on and Dip Switches 5 and 6 in the "ON" position.
1. At continuous fan setting: Heating or Cooling airflows are approximately 50% of selected cooling value.
2. LOW airflow (350 cfm/ton) is COMFORT & HUMID CLIMATE setting;
NORMAL airflow (400 cfm/ton) is typical setting;
HIGH airflow (450 cfm/ton) is DRY CLIMATE setting.

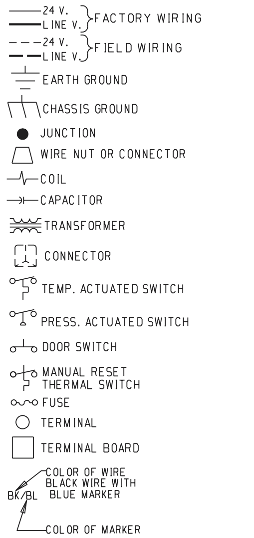
TUY120R9V5V FURNACE HEATING AIRFLOW (CFM) AND POWER (WATTS) VS. EXTERNAL STATIC PRESSURE WITH FILTER									
					1st Stage Capacity = 74,000 2nd Stage Capacity = 112,000				
	AIRFLOW SETTING	DIP SWITCH SETTING			EXTERNAL STATIC PRESSURE				
		SW 7	SW 8		0.1	0.3	0.5	0.7	0.9
HEATING 1ST STAGE	LOW	ON	ON	CFM TEMP. RISE WATTS	1090 62 165	1120 60 225	1080 63 270	1070 63 310	1010 67 380
	MEDIUM LOW	OFF	ON	CFM TEMP. RISE WATTS	1210 56 220	1200 56 280	1200 56 330	1180 57 395	1160 58 455
	NORMAL **	ON	OFF	CFM TEMP. RISE WATTS	1340 50 295	1360 50 350	1370 49 425	1380 49 495	1330 51 535
	HIGH	OFF	OFF	CFM TEMP. RISE WATTS	1430 47 390	1570 43 490	1580 43 565	1570 43 625	1390 49 565
HEATING 2ND STAGE	LOW	ON	ON	CFM TEMP. RISE WATTS	1660 63 485	1690 62 590	1680 62 640	1640 64 675	1460 72 600
	MEDIUM LOW	OFF	ON	CFM TEMP. RISE WATTS	1870 56 675	1870 56 745	1810 58 770	1680 62 715	1490 70 625
	NORMAL **	ON	OFF	CFM TEMP. RISE WATTS	2060 51 880	1990 53 890	1850 57 810	1710 61 750	1530 68 665
	HIGH	OFF	OFF	CFM TEMP. RISE WATTS	2200 48 1030	2090 50 965	1940 54 895	1790 58 830	1640 64 750

NOTES:
** Factory setting

Electrical Data

SCHEMATIC DIAGRAMS FOR GAS FURNACES

LEGEND

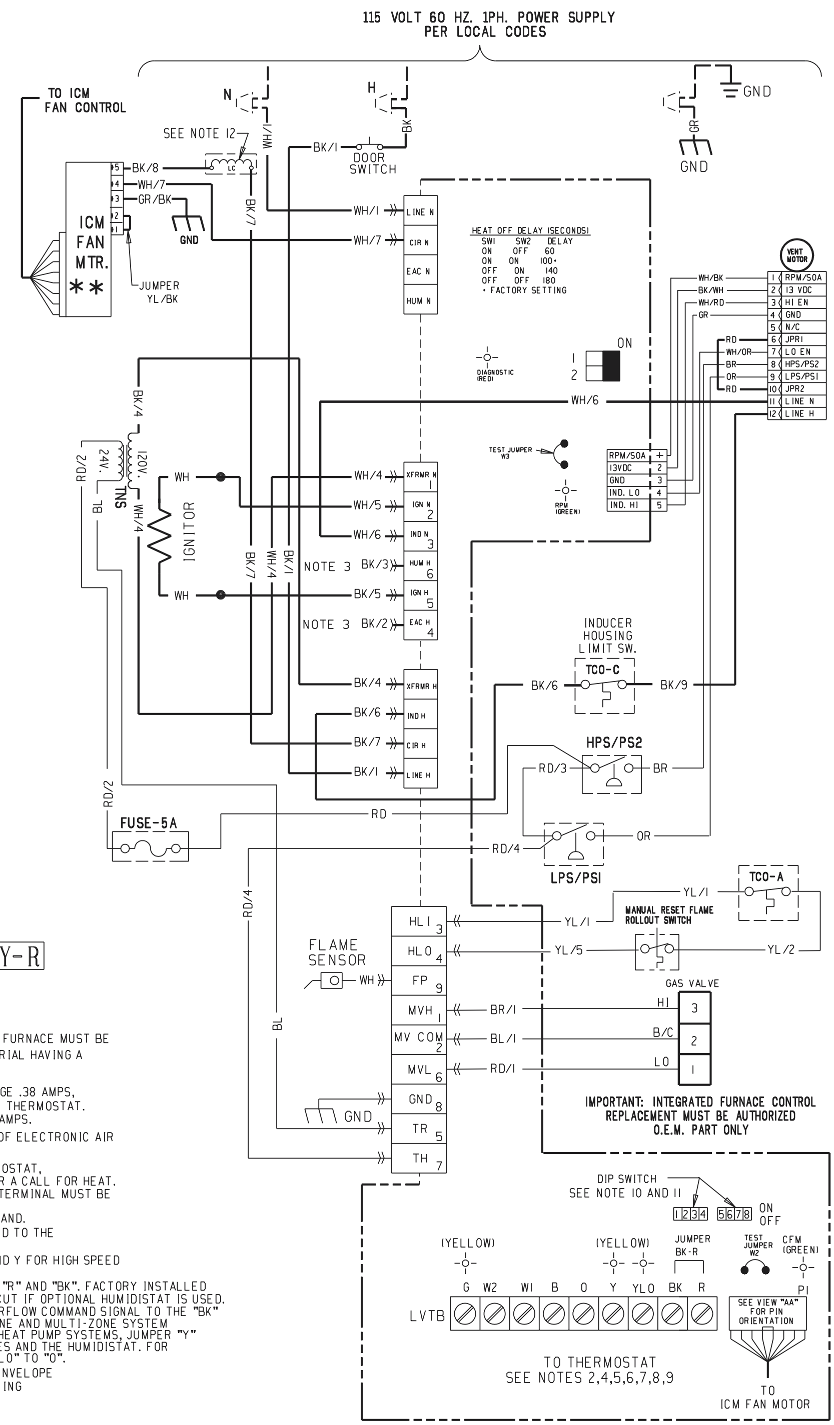


BK BLACK OR ORANGE YL YELLOW
BL BLUE RD RED GR GREEN
BR BROWN WH WHITE PR PURPLE

GV GAS VALVE
CF FAN CAPACITOR
GND GROUND
L LINE
LVTB LOW VOLTAGE TERMINAL BOARD
MTR MOTOR
N NEUTRAL
TCO HIGH TEMPERATURE LIMIT SWITCH
TNS TRANSFORMER
HI HI FIRE, SECOND STAGE
LO LOW FIRE, FIRST STAGE
B/C COMMON
LPS/PS1 PRES. SW. INPUT, FIRST STAGE
HPS/PS2 PRES. SW. INPUT, SECOND STAGE
HL1 HIGH LIMIT INPUT
HLO HIGH LIMIT OUTPUT
FP FLAME SENSOR PROBE
MVH GAS VALVE HIGH, SECOND STAGE
MVL GAS VALVE LOW, FIRST STAGE
MV GAS VALVE, COMMON
TR 24V AC TRANS. COMMON SIDE
TH 24V AC TRANS. HOT SIDE
ICM INTEGRAL CONTROL AND MOTOR
LC LINE CHOKE
** THERMALLY PROTECTED INTERNALLY

UY-R

TUY060,080,100,120R9V-V



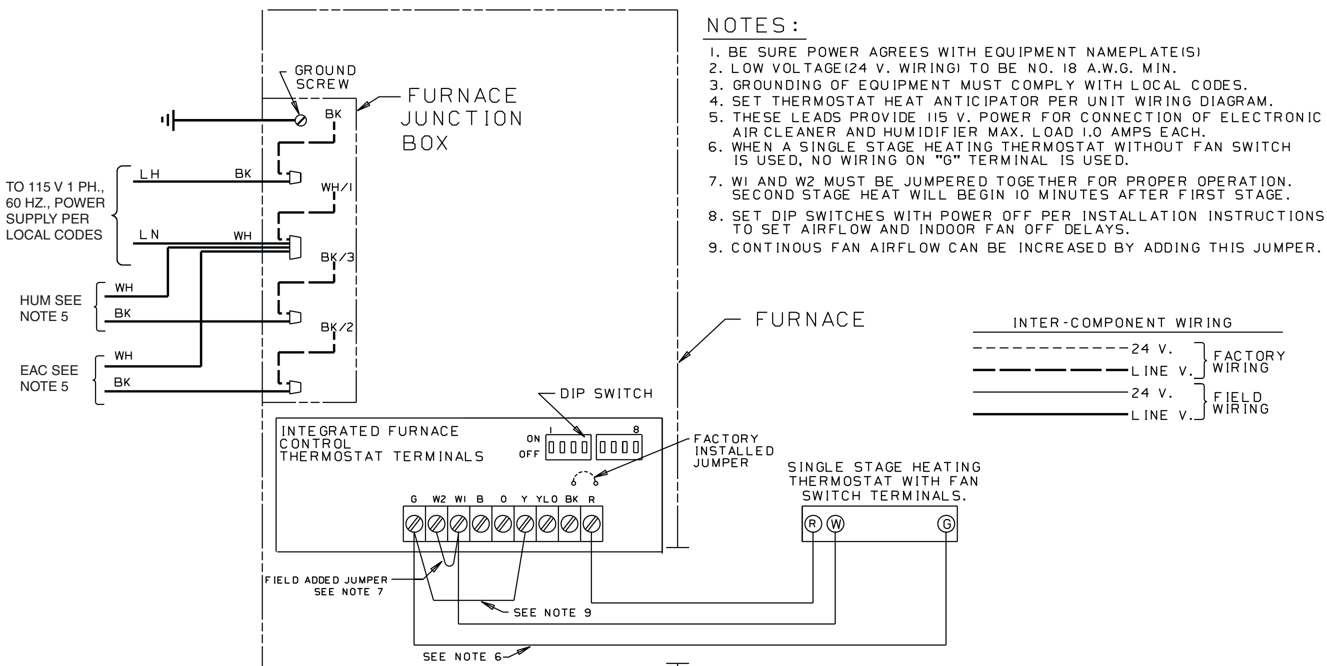
From Dwg. 21D341111 P03

NOTES:

1. IF ANY OF THE ORIGINAL WIRE AS SUPPLIED WITH THE FURNACE MUST BE REPLACED, IT MUST BE REPLACED WITH WIRING MATERIAL HAVING A TEMPERATURE RATING OF AT LEAST 105 C.
2. THERMOSTAT HEAT ANTICIPATOR SETTING: FIRST STAGE .38 AMPS, SECOND STAGE .13 AMPS, IF SETTING IS NOT FIXED ON THERMOSTAT. FOR SINGLE STAGE HEATING THERMOSTAT SET AT .51 AMPS.
3. THESE LEADS PROVIDE 120V POWER FOR CONNECTION OF ELECTRONIC AIR CLEANER AND HUMIDIFIER, MAX. LOAD 1.0 AMPS EACH.
4. JUMPER W1 AND W2 FOR SINGLE STAGE HEATING THERMOSTAT, SECOND STAGE WILL BE ENERGIZED 10 MINUTES AFTER A CALL FOR HEAT.
5. FOR PROPER OPERATION OF COOLING FAN SPEED, "Y" TERMINAL MUST BE CONNECTED TO ROOM THERMOSTAT.
6. GREEN LIGHT (CFM) FLASHES ONCE PER 100 CFM COMMAND.
7. FOR HEAT PUMP SYSTEMS Y AND O MUST BE CONNECTED TO THE LOW-VOLTAGE TERMINAL BOARD.
8. FOR TWO SPEED SYSTEMS, USE YLO FOR LOW SPEED AND Y FOR HIGH SPEED CONNECTION TO THE LOW-VOLTAGE TERMINAL BOARD.
9. OPTIONAL HUMIDISTAT IS TO BE CONNECTED BETWEEN "R" AND "BK". FACTORY INSTALLED JUMPER "R" TO "BK" ON THE CIRCUIT BOARD MUST BE CUT IF OPTIONAL HUMIDISTAT IS USED. THE JUMPER MUST ALSO BE CUT WHEN APPLYING AN AIRFLOW COMMAND SIGNAL TO THE "BK" INPUT SUCH AS WITH THE VARIABLE SPEED, SINGLE-ZONE AND MULTI-ZONE SYSTEM CONTROLLERS. ON SINGLE SPEED COOLING ONLY/NON-HEAT PUMP SYSTEMS, JUMPER "Y" TO "O" FOR PROPER OPERATION OF THE DELAY PROFILES AND THE HUMIDISTAT. FOR TWO COMPRESSOR OR TWO SPEED SYSTEMS, JUMPER "YLO" TO "O".
10. SEE CHART LOCATED IN THE FURNACE INFORMATION ENVELOPE FOR DIP SWITCH SETTINGS TO SET AIRFLOW AND COOLING OFF DELAYS.
11. POWER MUST BE OFF WHEN DIP SWITCHES ARE SET.
12. USED FOR •UY100R9V4 AND •UY120R9V5 MODELS ONLY.

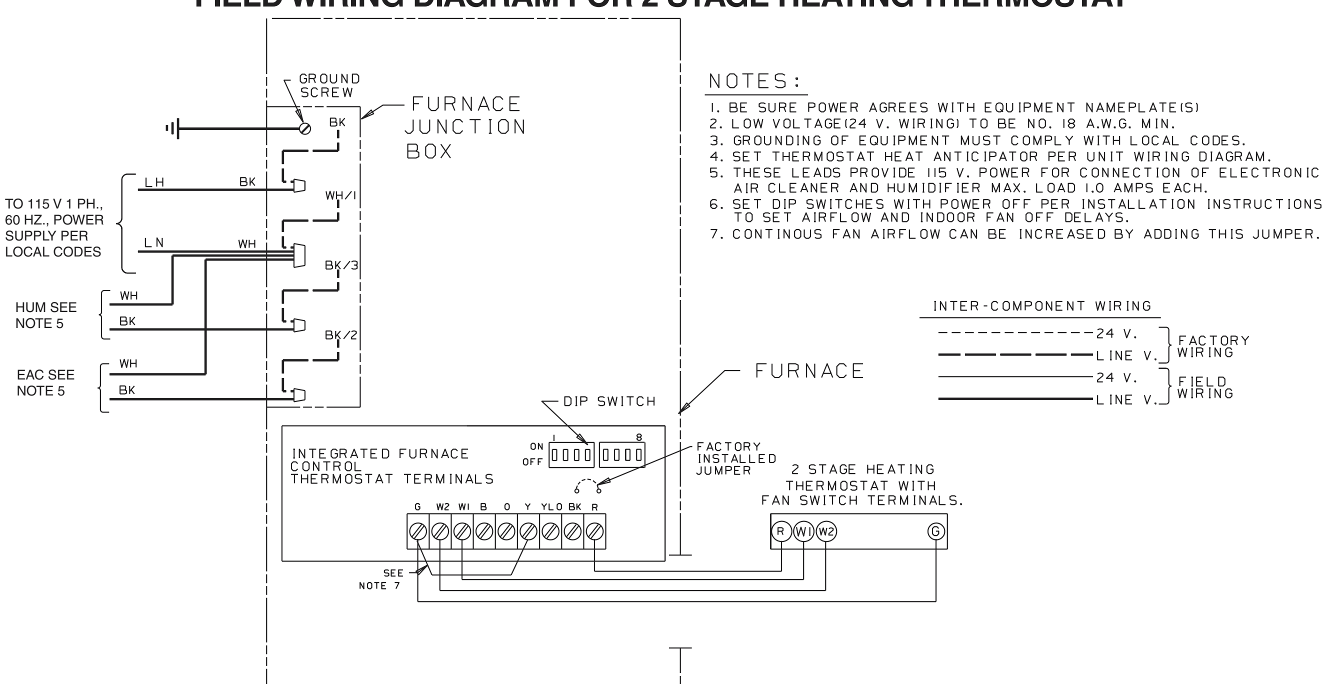
Field Wiring

FIELD WIRING DIAGRAM FOR SINGLE STAGE HEATING



From Dwg. 21B341127 Rev. 0

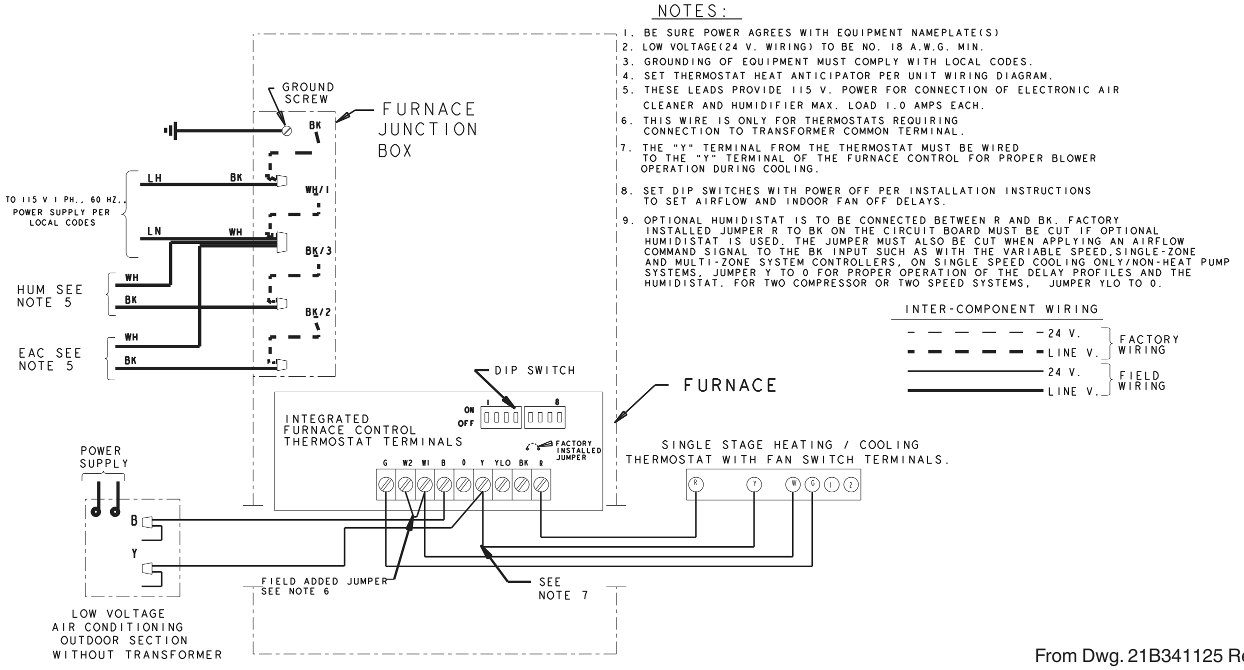
FIELD WIRING DIAGRAM FOR 2 STAGE HEATING THERMOSTAT



From Dwg. 21B341126 Rev. 0

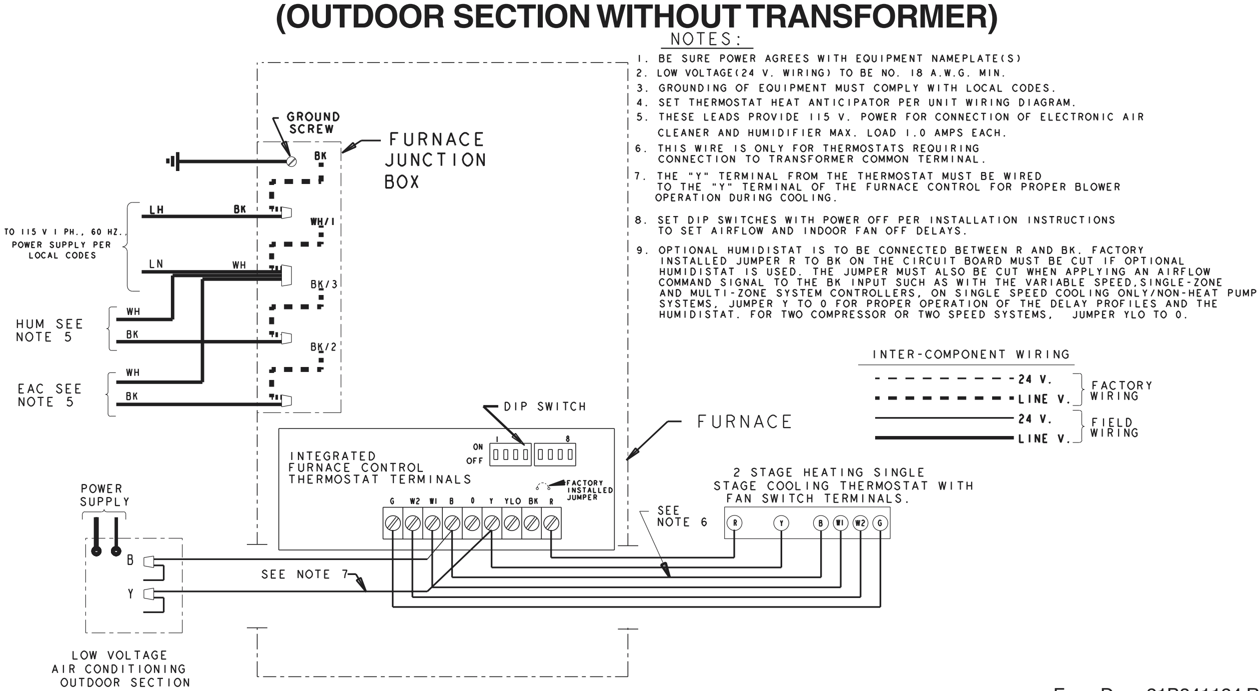
Field Wiring

FIELD WIRING DIAGRAM FOR SINGLE STAGE HEATING/COOLING (OUTDOOR SECTION WITHOUT TRANSFORMER)



From Dwg. 21B341125 Rev. 1

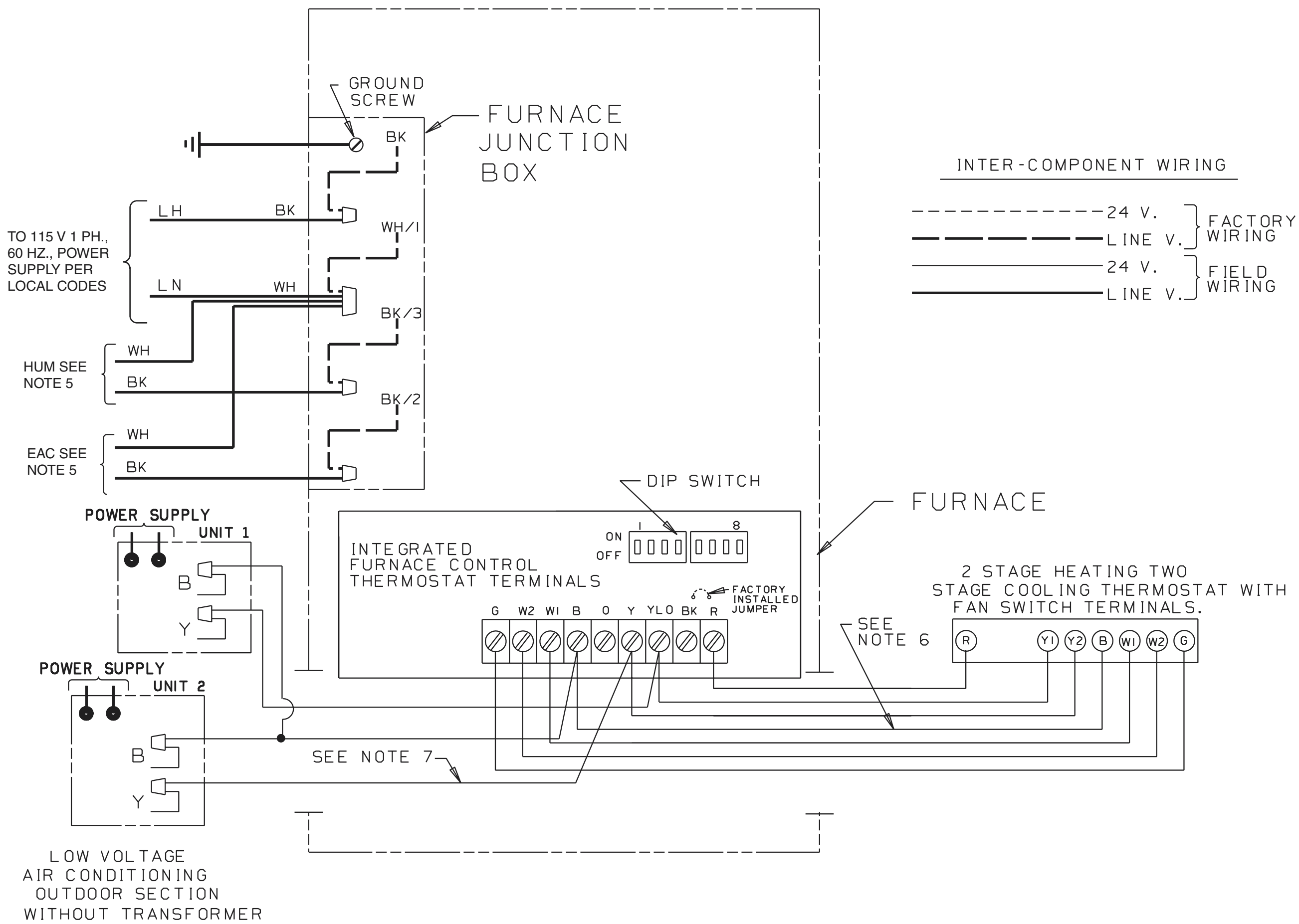
FIELD WIRING DIAGRAM FOR 2 STAGE HEATING SINGLE STAGE COOLING (OUTDOOR SECTION WITHOUT TRANSFORMER)



From Dwg. 21B341124 Rev. 1

Field Wiring

FIELD WIRING DIAGRAM FOR 2 STAGE HEATING TWO STAGE COOLING (OUTDOOR SECTION WITHOUT TRANSFORMER)



NOTES:

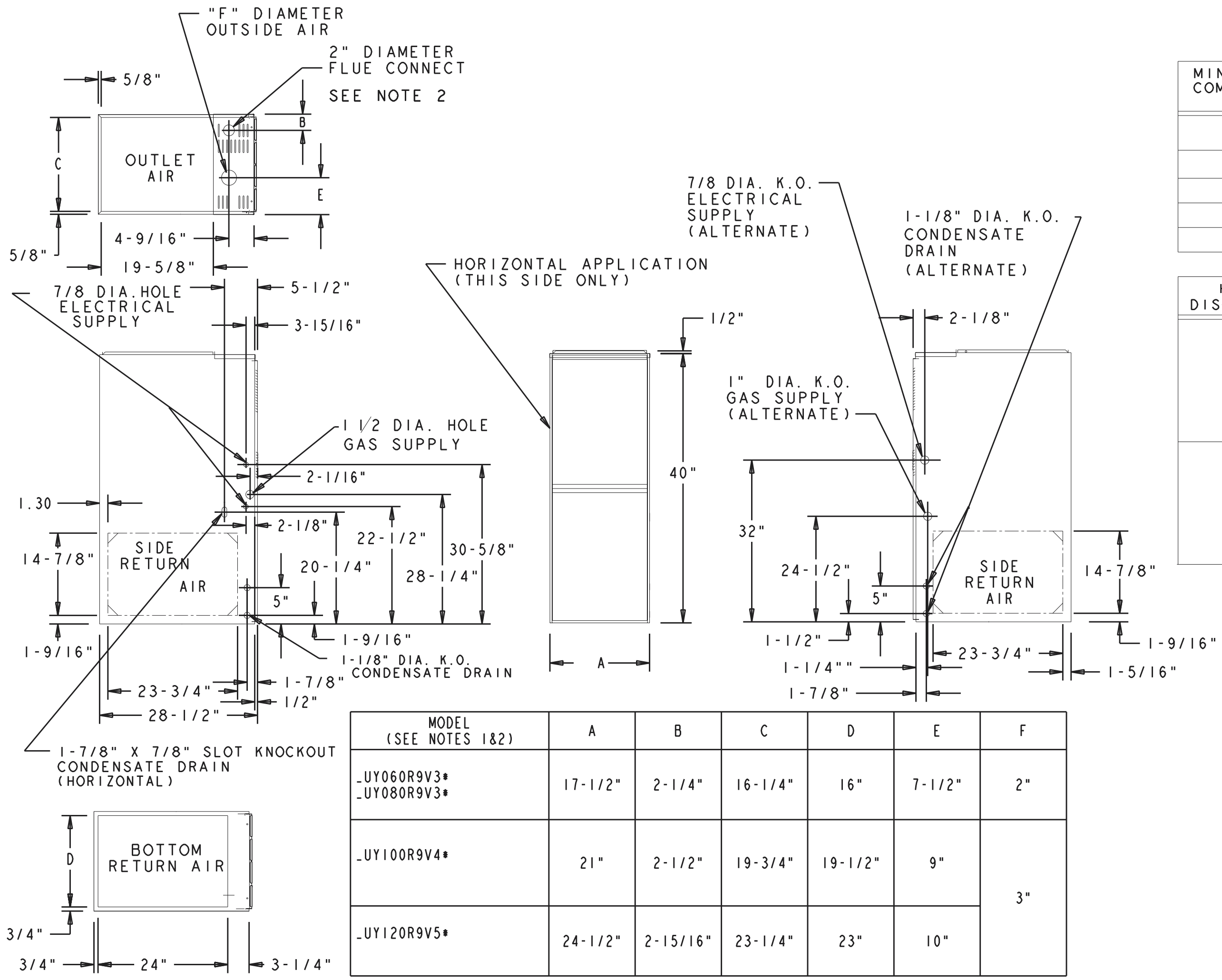
1. BE SURE POWER AGREES WITH EQUIPMENT NAMEPLATE(S)
2. LOW VOLTAGE(24 V. WIRING) TO BE NO. 18 A.W.G. MIN.
3. GROUNDING OF EQUIPMENT MUST COMPLY WITH LOCAL CODES.
4. SET THERMOSTAT HEAT ANTICIPATOR PER UNIT WIRING DIAGRAM.
5. THESE LEADS PROVIDE 115 V. POWER FOR CONNECTION OF ELECTRONIC AIR CLEANER AND HUMIDIFIER MAX. LOAD 1.0 AMPS EACH.
6. THIS WIRE IS ONLY FOR THERMOSTATS REQUIRING CONNECTION TO TRANSFORMER COMMON TERMINAL.
7. THE "Y2" TERMINAL FROM THE THERMOSTAT MUST BE WIRED TO THE "Y" TERMINAL OF THE FURNACE CONTROL FOR PROPER BLOWER OPERATION DURING COOLING.
8. SET DIP SWITCHES WITH POWER OFF PER INSTALLATION INSTRUCTIONS TO SET AIRFLOW AND INDOOR FAN OFF DELAYS.
9. OPTIONAL HUMIDISTAT IS TO BE CONNECTED BETWEEN R AND BK. FACTORY INSTALLED JUMPER R TO BK ON THE CIRCUIT BOARD MUST BE CUT IF OPTIONAL HUMIDISTAT IS USED. THE JUMPER MUST ALSO BE CUT WHEN APPLYING AN AIRFLOW COMMAND SIGNAL TO THE BK INPUT SUCH AS WITH THE VARIABLE SPEED SINGLE-ZONE AND MULTI-ZONE SYSTEM CONTROLLERS, ON SINGLE SPEED COOLING ONLY/NON-HEAT PUMP SYSTEMS, JUMPER Y TO O FOR PROPER OPERATION OF THE DELAY PROFILES AND THE HUMIDISTAT. FOR TWO COMPRESSOR OR TWO SPEED SYSTEMS, JUMPER YLO TO O.

From Dwg. 21B341128 Rev. 0

Pub. No. 22-1682-05-0802 (EN)

Dimensions

TUY-R9V-V OUTLINE DRAWING
(ALL DIMENSIONS ARE IN INCHES)



MODEL (SEE NOTES 1&2)	A	B	C	D	E	F
_UY060R9V3* _UY080R9V3*	17-1/2"	2-1/4"	16-1/4"	16"	7-1/2"	2"
_UY100R9V4*	21"	2-1/2"	19-3/4"	19-1/2"	9"	3"
_UY120R9V5*	24-1/2"	2-15/16"	23-1/4"	23"	10"	

* SUFFIX LETTER MAY BE "V", 0 THRU 9

NOTES:
1. PREFIX LETTER MAYBE "A" OR "T" DEPENDING ON BRAND.
2. DIAMETER OF VENT PIPE MAY BE LIMITED TO 2-1/2" OR 3" ON SOME MODELS AT DIFFERENT ALTITUDES. REFER TO THE VENT LENGTH TABLE FOR PROPER APPLICATION.

MINIMUM CLEARANCE TO COMBUSTIBLE MATERIALS UPFLOW	
SIDES	0"
REAR	0"
FRONT	3"
TOP	1"
FLUE	0"

HORIZONTAL (FLUE DISCHARGE ON THE LEFT)	
ALCOVE	
SIDES	
RIGHT	0"
LEFT	0"
REAR	6"
FRONT	18"
TOP	1"
FLUE	0"
CLOSET	
SIDES	
RIGHT	1"
LEFT	1"
REAR	3"
FRONT	3"
TOP	1"
FLUE	0"

DESIGN CERTIFIED

CERTIFIED

energy

P.I.

Trane
A business of American Standard Companies
www.trane.com